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Airport Sound Insulation Program

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Pilot Phase Summary

Introduction

Ted Stevens Anchorage International Airport (ANC) is implementing a Quieter Home Program to reduce the impacts of aircraft noise on the communities surrounding the Airport. This Program is the culmination of several years of effort by the Airport, the Federal Aviation Administration (FAA), and the community. The Program will be funded in part by the FAA and in part by the Airport. There will be no cost to the homeowner.

The first step in the process is the implementation of the Pilot Phase that will involve the sound insulation of approximately 30

Acoustical Measurements



homes in the most noise impacted areas. The goal of the Pilot Phase is to examine the effectiveness of various sound insulation measures on different housing types in

Anchorage. The Pilot Phase participants will play an important role in shaping the Program for the long term.

Background

The Airport prepared a Federal Aviation Regulation Part 150 Noise Compatibility Study (FAR Part 150 Study) to examine the aircraft noise exposure on the communities surrounding ANC. The FAR Part 150 Noise Study was completed in 1999. A series of recommendations to reduce the noise exposure

were adopted as a result of the FAA's approval of the FAR Part 150 Study. These included the sound insulation of approximately 650 residences.

Noise Contours

The eligibility of homes for the Program is based upon noise contours for the Airport. Noise contours represent noise levels resulting from aircraft operations. The contours are developed with an FAA specified computer model called the Integrated Noise Model or INM.

The Day-Night Average Sound Level (DNL) contours represent an average day of aircraft operations at the Airport. The model develops the contours based upon a database of measured noise levels for individual aircraft. Aircraft operations that occur between 10:00 p.m. and 7:00 a.m. are weighted with an additional 10 decibels (dB) to account for the fact that most people are sleeping at this time in a residential area. The human ear perceives an increase in noise by 10 dB as twice as loud.

Homes that are located within the DNL 65 dB contour will be eligible for the Program, if constructed prior to October 1, 1998. The FAA has established the DNL 65 dB contour as the minimum level for eligibility in residential sound insulation programs. The Quieter Home Program will be implemented in phases that will occur over several years.

Treatment Method

There are two goals that the FAA encourages programs of this type to achieve. The first is a reduction of the interior noise levels by at least 5 dB. The second goal is to reduce interior

noise to a level equivalent to DNL 45 dB. This level of noise will allow for normal speech with minimal disruption from aircraft noise.

Although each home will be evaluated for specific improvements to reduce the interior noise levels, there is a typical range of treatments used in sound insulation programs: They include:

- Replacement of existing windows with new acoustical windows
- Replacement of existing exterior doors with new prime and storm doors
- Insulation in the attic and wall cavities (where practical)
- Improvements to ventilation systems (where necessary)

It usually takes approximately 10 to 15 working days to install all of the materials. An inspector will be present in the neighborhood at all times during construction to monitor the progress of the construction crews, and to coordinate issues with the homeowners.



Improvements to the ventilation system is sometimes needed in order for the homeowner to keep the windows and doors closed. The ventilation system permits the homeowner to maintain a comfortable temperature in the home. The new acoustical windows can be opened, if needed. When open, the noise levels will no longer be reduced.

Program Funding

Funding for the Pilot Phase of the Program is being provided by the FAA and the Airport.

The Airport will apply annually to the FAA for Airport Improvement Program (AIP) grant funds for the Program. The FAA will notify the Airport if and how much funding will be available for the next Program phase. The Program will compete for funds with other programs across the country. Based upon conversations with the

FAA, the Airport is confident that grant funds will be available to implement the entire Program.

The FAA grant funds are allocated from the Aviation Trust Fund, which in turn is funded with taxes, and fees assessed on airline tickets and aircraft fuel sales. The Airport's share of the Program costs is paid with fees assessed to the airlines operating at ANC. Put another way, the parties responsible for making the noise are paying for the noise program.

Requirements of Participants

The Program is voluntary for residents in the eligible areas. There is **no cost** to the participants for participating in the Program. In exchange for the sound insulation treatments, each homeowner is required to sign an avigation easement. A copy of the avigation easement will be provided as part of your application package.

The avigation easement is similar to utility or drainage easements. Basically, the easement gives the Airport the right to utilize the airspace over the property without objection from the property owner. The easement restricts the right of the property owner to recover legal damages from the Airport for things related to the normal operation of aircraft (including noise, vibrations, etc.).

"There is NO COST to the participants for participating in the program."

The Program also requires that the homeowner participant:

- Attend all meetings related to the project
- Not place the property on the market for sale until the installation of the sound insulation materials is complete
- Be responsible for the removal of all breakables and window coverings prior to construction
- Be present (or have a designated representative present) at all times during the construction period

Schedule and Process

The Pilot Phase design process will begin with a series of Public Meetings in late 2001.

A design team from the Airport's consultant team will visit each home for approximately 2 hours to:

- Discuss the Program with the homeowner and answer questions
- Conduct an inventory of the windows, doors, heating system, and other areas of the home
- Collect noise measurement data

A design package for each home will be prepared and presented to the homeowner at a second visit approximately four weeks after the initial visit. During this visit, the homeowner will have the opportunity to select window and doors styles and colors from a list of choices. At the completion of this visit, the homeowner will be asked to approve the package in writing.

All of the home packages will be grouped together and advertised for public construction bids in spring 2002. Qualified contractors will submit bids on the project and the lowest responsible bid will be awarded the project. The successful contractor



will visit each house during the spring to collect final measurements for ordering of the materials. The windows, which are custom manufactured for each home, usually take eight to twelve weeks to be delivered. Once the windows have been delivered, a construction time will be scheduled for each home.

It is expected that the construction will begin

during late summer of 2002 on the Pilot Phase homes. The Airport's consultant team will provide full-time inspection of the contractor's progress during construction. The inspector will meet with each homeowner a few days prior to the start of construction to explain the details of the process and answer any questions the homeowner may have. A walking tour of the home will be conducted to review the work areas and collect a video record of the interior of the home. The video record will protect the homeowner should any damage occur during construction as a result of the contractor's actions.

The contractor will notify the inspector when construction is complete, and the inspector will conduct a walk-through of the home with the homeowner and contractor to

note any outstanding issues (typically referred to as the "punch list"). The contractor will be required to rectify the punch list items before the home is deemed complete, and payment can be made to the contractor.

After the punch list is complete, the inspector, the contractor, and the homeowner will review the home and sign a completion of construction form. During this session, the material and workmanship warranties will also be reviewed with the homeowner.

For More Information

If you are interested in learning more about the Pilot Phase or the Program in general, please contact Michael Hotaling at (907) 277-1223.

